

## IN THE SPECIFICATION

Please replace the paragraph beginning at page 7, line 23 and ending at page 8, line 18, with the following.

--A dielectric film structure according to a first invention is a dielectric film structure having a substrate and a dielectric film provided on the substrate and in which the dielectric film has ~~(001)~~ (001) face orientation with respect to the substrate and in which a value  $u$  in the following equation (1) regarding the dielectric film is a real number greater than 2:

$$u = (C_c/C_a) \times (W_a/W_c) \quad \dots (1)$$

where,  $C_c$  is a count number (number of counts) of a peak of a  $(00l')$  face of the dielectric film in an Out-of-plane X ray diffraction measurement (here,  $l'$  is a natural number selected so that  $C_c$  becomes maximum);  $C_a$  is a count number of a peak of a  $(h'00)$  face of the dielectric film in an In-plane X ray diffraction measurement (here,  $h'$  is a natural number selected so that  $C_c$  becomes maximum);  $W_c$  is a half-value width of a peak of the  $(00l')$  face of the dielectric film in an Out-of-plane rocking curve X ray diffraction measurement; and  $W_a$  is a half-value width of a peak of the  $(h'00)$  face of the dielectric film in an In-plane rocking curve X ray diffraction measurement.--

Please replace the paragraph beginning at page 9, line 8 and ending at page 10, line 6, with the following.

--The dielectric film structure according to the first invention achieves the excellent dielectric, piezoelectric, pyroelectric and ferroelectric properties since the dielectric film has the  $(001)$  face orientation with respect to the substrate and the crystal

structure thereof is controlled so that the value  $u$  in the above equation (1) becomes the real number greater than 2, i.e. the crystal structure is controlled in a more preferable manner in a thickness direction of the dielectric film and a direction perpendicular thereto. By using the dielectric film having such a crystalline feature, in these properties, the dielectric film structure having properties superior to those of the conventional multi crystal dielectric film or the conventional dielectric film having ~~(001)~~ (001) face orientation can be obtained. Further, the dielectric film structure according to the first invention has excellent endurance and, thus, even when it is used repeatedly, deterioration of the properties does almost not occur. In the dielectric film structure according to the first invention, preferably, the value  $u$  is the real number greater than 3 and, more preferably, the value  $u$  is the real number greater than 5, and, most preferably, the value  $u$  is the real number greater than 7.--

Please replace the paragraph beginning at page 10, line 7 and ending at page 11, line 3, with the following.

--It is preferable that, in the dielectric film having the ~~(001)~~ (001) face orientation according to the first invention, the count number of faces other than the ~~(001)~~ (001) face is smaller than 10% of the count number of the (001') face in the Out-of-plane X ray diffraction measurement and the count number of faces other than the (h00) face is smaller than 10% of the count number of the (h'00) face in the In-plane X ray diffraction measurement. However,  $h$  and  $l$  are any natural numbers and  $l'$  is a natural number selected so that the count number of the peak of the (001') face becomes maximum in the Out-of-plane X ray diffraction measurement and  $[[h]]$   $h'$  is a natural number selected so

that the count number of the peak of the (h'00) face becomes maximum in the In-plane X ray diffraction measurement. Preferably, these are smaller than 5% and more preferably smaller than 1%. Incidentally, regarding the (00l) face and (h00) faces of the dielectric film in the present invention, when it is assumed that face index of the crystal is (hkl), a face parallel to the surface of the substrate is referred to as the (00l) face and a face substantially perpendicular to the surface of the substrate is referred to as the (h00) face.--

Please replace the paragraph beginning at page 12, line 21 and ending at page 13, line 8, with the following.

--In the dielectric film of the dielectric film structure according to the first invention, regarding the measurement value in the X ray diffraction, when the value  $u$  in the equation  $u = (C_c/C_a) \times (W_a/W_c)$  is the real number greater than 2 and preferably greater than 3 and more preferably greater than 5 and greater than 7, the excellent dielectric, piezoelectric, pyroelectric and ferroelectric properties can be achieved. These properties are superior to those of the conventional multi crystal dielectric film or the conventional dielectric film having the ~~(00l)~~ (001) face orientation can be obtained. Further, the dielectric film structure has excellent endurance and, thus, even when it is used repeatedly, the deterioration of the properties does almost not occur.--

Please replace the paragraph beginning at page 16, line 24 and ending at page 17, line 7, with the following.

--It is preferable that, in the dielectric film having the (11l) face orientation according to the second invention, the count number of faces not parallel to the (11l) face

is smaller than 10% of the count number of the (111) face in the Out-of-plane X ray diffraction measurement and the count number of faces not parallel to the  $[(110)]$   $\{110\}$  face is smaller than 10% of the count number of the (-110) face in the In-plane X ray diffraction measurement. Preferably, these are both smaller than 5% and more preferably smaller than 1%.--

Please replace the paragraph beginning at page 22, line 27 and ending at page 23, line 10, with the following.

--It is preferable that, in the dielectric film having the (110) face orientation according to the third invention, the count number of faces not parallel to the (110) face is smaller than 10% of the count number of the (110) face in the Out-of-plane X ray diffraction measurement and the count number of faces not parallel to the  $[(110)]$   $\{110\}$  face is smaller than 10% of the count number of the (-110) face in the In-plane X ray diffraction measurement. Preferably, these are both smaller than 5% and more preferably smaller than 1%.--

Please replace the paragraph beginning at page 43, line 6 and ending at line 25, with the following.

--Further, Out-of-plane and In-plane X ray diffraction measurements were performed regarding the dielectric films. In all of the embodiments 8 to 12, it was found that a peak of the maximum count number of the dielectric film in the Out-of-plane X ray diffraction measurement was a peak of a (111) face. Here, it is assumed that a maximum count number of a peak among peaks of faces not parallel to the (111) face is  $C_{n111}$  and a

count number of a maximum peak among peaks of faces not parallel to a  $[[(-110)]]$   $\{-110\}$  face in the In-plane X ray diffraction measurement is  $C_{n-110}$ . In the Out-of-plane X ray diffraction measurement according to all of the embodiments 8 to 12, it was found that  $C_{n111}$  is smaller than 10% of  $C_{111}$ . In the In-plane X ray diffraction measurements according to all of the embodiments 8 to 12, it was found that  $C_{n-110}$  is smaller than 10% of  $C_{-110}$ . Details regarding ratios of the count numbers  $C_{n111}/C_{111}$  and  $C_{n-110}/C_{-110}$  are shown in the Table 8. Further,  $C_{111}$ ,  $W_{111}$ ,  $C_{-110}$ ,  $W_{-110}$  and  $v$  are shown in the following Table 7.--